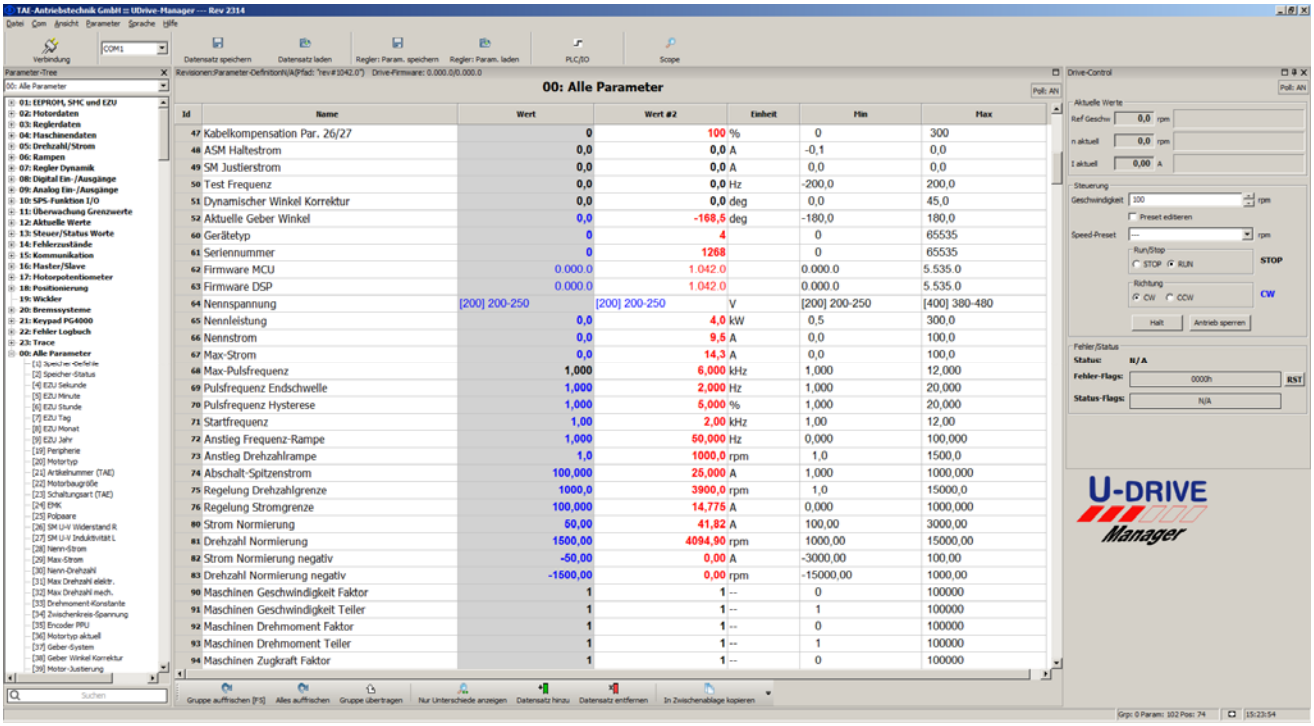
Description of the Parameters of the U-Drive



Pikatron GmbH • division TAE Antriebstechnik GmbH • Raiffeisenstrasse 10 • D-61250 Usingen

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Access explanation
R and RC = Read
RW = Read/Write
RW (0) = Read, Write while staionary

1. Parameter Group 1

01: EEPROM, SMC and EZU
Management and use of the U-Drive EEPROM, Smart-Card funtions, real-time clock and options.

01: EEPROM, SMC and EZU					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1	Memory CMD	0000h ... 333Fh	2000h	[bits]	RW

Bit	Name	Notes
0	Store Parameters	Save parameters on the U-Drive-EEPROM
1	Load Parameters	Load parameters from the U-Drive-EEPROM
2	Store Default Parameters	Save current parameters as "standardparameter" on EEPROM
3	Load Default Parameters	Load standard parameters from EEPROM
4	Store Factory Defaults	Save current parameters as "factory setting" on EEPROM
5	Load Factory Defaults	Load parameters "factory setting" from EEPROM
6		
7		
8	Store Parameters	Save current parameters onto Smart-Card
9	Load Parameters	Load parameters from Smart-Card
10		
11		
12	Set Clock	Transfer set time to real-time clock
13	Get Clock	Read real-time clock in cycles
14		
15		

01: EEPROM, SMC and EZU					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
2	Memory STAT	0000h ... 038Fh	---h	[bits]	R

All data bits in parameter 2 are actual values and only 20-40ms is visible

Bit	Name	Notes
0	Store Ok	Parameters saved on U-Drive EEPROM
1	Load Ok	Parameters loaded from U-Drive EEPROM
2	Store Error	Error message while saving the parameters on the U-Drive EEPROM
3	Load Error	Error message while loading the parameters from the U-Drive EEPROM
4		
5		
6		
7	Set Clock Ok	Confirmation: Set time adopted
8	Get Clock Ok	Confirmation: Time read
9		
10		
11		
12		
13		
14		
15		

01: EEPROM, SMC and EZU					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
4	RTC Second	0 ... 59	---	s	R
5	RTC Minute	0 ... 59	---	min	R
6	RTC Hour	0 ... 23	---	h	R
7	RTC Day	1 ... 31	---	d	R
8	RTC Month	1 ... 12	---	mon	R
9	RTC Year	2007 ... 2099	---	y	R

01: EEPROM, SMC and EZU					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
19	Peripherals	0000h ... 00FEh	---	[bits]	R

Display of existing circuit board options

Bit	Name	Notes
0		
1	CanOpenPCBoard	
2	ProfibusPCBoard	
3	EthernetPCBoard	
4	ADIOPCBoard	
5	TaeEncoderPCBoard	
6	422EncoderPCBoard	
7	ResolverPCBoard	

2. Parameter Group 2

02: motor data

Entering the type of motor or the physical attributes of the motor in use.

The parameters of parameter group 2 are preset by TAE before delivery as long as the motor type is known!!!

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
20	Motor Type	[00] ASM_UF ... [04] SM_SL	---		RW

Selecting the motor type:

No.	Name	Notes
0	ASM U/F	Asynchronous motor operated with voltage/frequency characteristics
1	ASM Sensor	Vector controlled asynchronous motor with rotation speed sensor
2	ASM Sensorless	Vector controlled asynchronous motor without rotation speed sensor
3	Syn Sensor	Synchronous motor with rotor position and rotation speed sensor
4	Syn Sensorless	Synchronous motor without “sensorless”rotation speed sensor

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
21	Article Number (TAE)	0 ... 65535	---		RW

Entering the first 4 digits of the TAE motor article number

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
22	Motor Size	0 ... 65535	---		RW

Entering the digits from the motor designation

Example: Designation =BL-N-180C, Input =180

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
23	Kind of Winding	[00] Star ... [01] Delta	[00] Stern		RW

Choosing the method of connection:
Not in use, always choose the star connection

Nr.	Name	
0	Star	
1	Delta	

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
24	Motor EMF	0,00 ... 1000,00	---	V/1000rpm	RW

Electromagnetic force in motor.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
25	Motor Pole Pairs	1 ... 120	---		RW

Number of pole pairs in the motor

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
26	Motor Resistance	0,000 ... 200,000	---	Ohm	RW

Resistance between the connections U and V of the motor.
(Only necessary with synchronous motors)

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
27	Motor Inductance	0,000 ... 600,000	---	mH	RW

Inductivity between the connections U and V of the motor.
(Only necessary with synchronous motors)

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
28	Motor Rated Current	0,0 ... 50,0	---	A	RW
29	Motor Max Current	0,0 ... 50,0	---	A	RW
30	Motor Rated Speed	1,0 ... 1000,0	---	rpm	RW
31	Motor Max Speed electr.	1,0 ... 1000,0	---	rpm	RW
32	Motor Max Speed mech.	1,0 ... 1000,0	---	rpm	RW

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
33	Torque constant	0,000 ... 50,000	---	Nm/A	RW

Ratio between torque and current intensity in the motor.
Needed for the calculation of the torque.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
34	DC Buss Voltage	0 ... 600	---	V	RW

Maximum value of the supply voltage: the rotational speed data for the motor is based on this value.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
35	Encoder PPR	0 ... 10000	---	ppr	RW

Speed Encoder (0°/90°-signal):
Number of increments per rotation of the motor

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
36	Motor Accepted Type	[00] ASM_UF ... [04] SM_SL	---		R

Display of set motor type.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
37	Encoder Type	[00] Sensorless ... [03] Resolver	---		R

Display of installed sensor circuit board.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
38	Encoder Phase Correction	-180,0 ... 180,0	---	°deg	RW

Electric angle adjustment of the commutation signals.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
39	Motor adjustment	0000h ... 0003h	0000h		RW

Bit	Name	Notes
0	Start Autotuning	If Bit 0 is set, Par. 40-44 will be determined and registered within 30sec. The motor is stationary during this process. **Only for asynchronous motors!**
1	Adjust Feedback System	Sufficient adjusting current (Par.49) required (the motor should be able to move), set Par. 39 Bit 1 and then enable controller. The motor will align itself, **with an undefined direction of rotation**. The angle needed for the sensor will be shown in Par. 38!
2	Freeze Adjusted Angle	Set Bit 2! Sensor angle will be frozen (Par.38). Then re-enable controller and reset B1 **afterwards**.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
40	ASM Main Inductance	0,000 ... 2500,000	---	mH	RW(0)

Only for asynchronous motors!
Determined by auto-tuning! Alternative: Enter manufacturer's settings.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
41	ASM Rotor Resistance	0,000 ... 200,000	---	Ohm	RW(0)

Only for asynchronous motors!Determined by auto-tuning! Alternative: Enter manufacturer's settings.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
42	ASM Stator Resistance	0,000 ... 200,000	---	Ohm	RW(0)

Only for asynchronous motors!
Determined by auto-tuning! Alternative: Enter manufacturer's settings.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
43	ASM Leakage Inductance Rotor	0,000 ... 500,000	---	mH	RW(0)

Only for asynchronous motors!
Determined by auto-tuning! Alternative: Enter manufacturer's settings.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
44	ASM Leakage Inductance Stator	0,000 ... 500,000	---	mH	RW(0)

Only for asynchronous motors!
Determined by auto-tuning! Alternative: Enter manufacturer's settings.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
45	ASM Rated Voltage effective	0,0 ... 600	400	V	RW(0)

Only for asynchronous motors!
See motor rating plate.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
46	ASM Rated Frequency	0,000 ... 120,000	50	Hz	RW(0)

Only for asynchronous motors!
See motor rating plate.

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
47	Cable compensation for Param 26/27	50 ... 100	100	%	RW

Only for synchronous motors!
The pysical properties of the motor cable can have an adverse effect on the resistance and the inductivity to the motor.
e.g.: current regulator vibration or overcurrent cut-off (“F1”)
This can be compensated with Parameter 47!

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
48	ASM Brake current	0,0 ... Par.28	0	A	RW

DC-holding current in case of motor shutdown

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
49	Motor adj. Current	0,0 ... Par.28	0	A	RW

Only for synchronous motors!

DC-current during sensor adjustment. **The rotor will be aligned and may therefore rotate a few angular degrees in an undefined direction!**

02: Motor Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
50	Test frequency	-50,0 ... 50,0	0	Hz	R

Frequency controls for motor diagnosis.

3. Parameter Group 3

03: Regulator data

Input or display of regulator type and the physical data for regulator.

The parameters in parameter group 3 are set by TAE and can only be changed byTAE, with the exception of parameter 68 (Max pulse frequency), !!!

03: Drive Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
60	Device Type	0 ... 65535	---		RC
61	Serial Number	0 ... 65535	---		RC
62	Rev_Firmware MCU	0,000 ... 65535,000	---		RC
63	Rev_Firmware DSP	0,000 ... 65535,000	---		RC
64	Rated Voltage	[200] 200 - 250 ... [400] 380 - 480	---	V	RC
65	Rated Power	0,5 ... 300,0	---	kW	RC
66	Rated Current Drv	0,0 ... [Par.76]	---	A	RC
67	Max Current Drv	0,0 ... [Par76]	---	A	RC
68	Max Pulse Frequency	1,000 ... 12,000	6,000	kHz	RW
69	Pulse Frequency Max Threshold	1,000 ... 20,000	3,000	Hz	RC
70	Pulse Frequency Hysteresis	1,000 ... 20,000	5,000	%	RC
71	Start Frequency	1,00 ... 12,00	1,80	kHz	RC
72	Increase Frequency-Ramp	0,000 ... 100,000	---	Hz	RC
73	Increase Speed-Ramp	1.0 … 1500.0	---	rpm	R
74	Switch-Off Peak Current	1,000 ... 1000,000	---	A	RC
75	Controller Speed Limit	1,000 ... 15000,000	3900,000	rpm	RC
76	Controller Current Limit	0,000 ... 1000,000	---	A	RC
80	Current Calibration	100,00 ... 3000,00	---	A	R
81	Speed Calibration	[Par75] ... 15000,00	---	rpm	R
82	Current Calibration negative	-3000,00 ... 100,00	---	A	R
83	Speed Calibration negative	-15000,00 ... 3900,00	-1500,00	rpm	R

No function is assigned to Parameters 72, 73, 82 and 83.

4. Parameter Group 4

04: Machine data
Ratio factors between motor and machine. Display of machine's actual values.
The parameters in parameter group 4 are solely for the purpose of displaying information and therefore have no function or regulatory purpose!!!

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
90	Machine Speed Factor	0 ... 100000	1	--	RW
91	Machine Speed Divisor	1 ... 100000	1	--	RW

Par. 90 and 91 show the speed ratio between motor and machine.
The more numbers behind the decimal point, the more precise the result!
The result can be viewed on screen in Parameter 97.

Example. Extruder:
Motor rotation=2400 rpmin, gears-i=24,478 or 1/24,478 or 1000/24478

Par. 90=1000

Par. 91=24478

$$\text{Par.97} = \frac{\text{motor} - \text{rotation} \times \text{par.90}}{\text{par.91}} = \frac{2400\text{min}^{-1} \times 1000}{24478} = \underline{\underline{98{,}05\text{min}^{-1}}}$$

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
92	Machine Torque Factor	0 ... 100000	1	--	RW
93	Machine Torque Divisor	1 ... 100000	1	--	RW

Par. 92 and 93 represent torque ratio between motor und machine.
The more numbers behind the decimal point, the more precise the result!
The result can be viewed on screen in Parameter 98.

Example. Extruder:
Motor rotation =500N/m, gears -i=24,478 or. 24,478/1 or. 24478/1000
Where relevant Par. 92 should be multiplied with the efficiency of the gears! e.g.: 0,95

$$\text{Par.92} = 24478 \times 0.95 = \underline{\underline{23254}}$$

$$\text{Par.93} = 1000$$

$$\text{Screw torque} = \text{Par.98} = \frac{\text{Motor torque} \times \text{Par.92}}{\text{Par.93}} = \frac{500\ \text{Nm} \times 23254}{1000} = \underline{\underline{11627\ \text{Nm}}}$$

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
94	Machine Tension Factor	0 ... 100000	1	--	RW
95	Machine Tension Divisor	1 ... 100000	1	--	RW

In order to calculate the tensile force the gear ratio has to be entered in Par. 92 and 93!
Par. 94 and 95 represent the lever or radius ratio between 1 meter and the machine lever or the product.
The more numbers behind the decimal point, the more precise the result!
The result can be viewed on screen in parameter 99.

Example: Discharging or conveyor-belt:
Gear driving torque=250Nm
Reference value=1m=1000mm, derived from the gear driving torque (Nm=1N*1m)
Diameter of drum=310mm i.e. radius=155mm
Par. 94=1000
Par. 95=155

$$\text{Tensile force} = \text{par.99} = \frac{\text{Tensile force of gears (lever} = 1\text{m)} \times \text{Par.94}}{\text{Par.95}} = \frac{250\text{N} \times 1000\text{mm}}{155\text{mm}} = \underline{\underline{1612.9\text{N}}}$$

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
97	Machine Speed	0,000 ... 2147483647,000	---	--	R

Actual value: machine speed,. see Par. 90 for calculation .

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
98	Machine Torque	0,000 ... 2147483647,000	---	Nm	R

Actual value: machine torque. See Par. 93 for calculation

04: Machine Data					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
99	Machine Tension	0,000 ... 2147483647,000	---	N	R

Actual value: machine tensile force. See Par. 95 for calculation

5. Parameter Group 5

05: Rotation speed/current
Custom designed reference values for rotational speed and current or drive system's torque.
The parameters in parameter group 5 are limited by the parameter groups 2 or 3 (motor or regulator data) in order to remain within the standardisation limits and to prevent motor damage!

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
100	Dig. Speed-Set	0,0 ... Par.75	0,0	rpm	RW

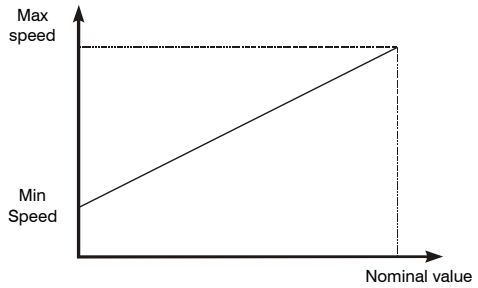
Required digital rotational speed setpoint for varying reference sources.
e.g.: PG4000, serial port (RS422) or field bus systems.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
101	Max Speed	0,0 ... Par.75	100,0	rpm	RW

User-specific rotational speed limitation of motor.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
102	Min Speed	0,0 ... Par.75	0,0	rpm	RW

If a minimal rotational speed is set then the external setpoints (0-100%) will relate to a min. and max. number of rotations.



05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
103	Torque-Set	0,0 ... 200,0	100,0	%	RW

Par. 103 offers the opportunity of restricting the torque in thousandths from 0.0 to 100.0%.
The required setpoint can be entered manually, via an analog input or through a field bus system.
100.0% is equivalent to Par.104 during acceleration (max current 1Q) and to Par.105 during braking (max current 4Q).

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
104	Max Current Accel (1Q)	0,00 ... Par.67	Par.66	A	RW

User-specific current limitation during the acceleration phase.
Motor, machine or product can be protected against thermal or mechanical overloading.
The maxim adjustable values are constant up to a pulse frequency of 8kHz . Above 8kHz, the max. values are limited according to the following graph.
In addition, the value is limited to the maximum motor current (Par.29).

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
105	Max Current Decel (4Q)	0,00 ... Par.67	0,00	A	RW

User-specific current limits during the braking phase.

Motor, machine or product can be protected against thermal or mechanical overloading.

See graph Par. 104
The value is further limited to the maximum motor current (Par.29).

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
106	Motor working load	0,0 ... 500,0	---	%	RC

Indicator of possible stress to the motor.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
107	Drive working load 1Q	0,0 ... 500,0	---	%	RC

Indicator of possible stress to the regulator during acceleration.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
108	Drive working load 4Q	0,0 ... 500,0	---	%	RC

Indicator of possible stress to the regulator during braking.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
109	Overload time	1,00 ... 1000,00	1,00	s	RW(0)

Admissable start up overload period up to a motor frequency of 3 Hz..
Above 3Hz, overloading is permanently available. However motor or regulator temperature faults are possible if the motor or regulator are overloaded for too long!

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
110	Speed Preset 1	0,0 ... Par.75	0,0	rpm	RW

Par. 110-116 (fixed rotational speed 1-7) is used to set fixed rotational speeds using Control Par. 551-554 (Bit 4-6) or Par.565.

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
111	Speed Preset 2	0,0 ... Par.75	0,0	rpm	RW
112	Speed Preset 3	0,0 ... Par.75	0,0	rpm	RW
113	Speed Preset 4	0,0 ... Par.75	0,0	rpm	RW
114	Speed Preset 5	0,0 ... Par.75	0,0	rpm	RW
115	Speed Preset 6	0,0 ... Par.75	0,0	rpm	RW
116	Speed Preset 7	0,0 ... Par.75	0,0	rpm	RW

See Par. 110

05: Speed/Current					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
117	Reference Speed Selection	[00] Preset Speed ... [08] Positioning	[03] Analog Input TR8	---	RW

The definition of the required rotational speed setpoint source can be selected as follows:
The number in brackets corresponds with the priority of the set function. (1=highest priority)
This means, for example, if "analog input" is selected and the "slave-function" is then turned on, the analog input is deactivated and the incremental slave setpoint is activated.
The current reference source is shown in Par. 567 (current source of reference rotational speed)

Nr.	(Priorität) Name	Notes
0	(1) Preset Speed	Is also valid for manual inputting of the setpoint via the U-drive Manager
1	(5)Analog Inputs	Digital/analog PCB (Option)
2		
3	(5) Analog Input TR 8	
4	(3) Master/Slave	Incremental setpoint.
5	(2) Motorpoti	
6	(4) Profibus	
7		
8	(2) Positioning	

6. Parameter Group 6

06: Ramps
The acceleration and braking ramps and the corresponding S-curves at the start and end of the ramps.
The S-curves are currently not available!

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
119	Ramp Reference Speed	0,0 ... Par.75	100,0	rpm	RW

All ramp times relate to this rotational speed!

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
120	Ramp 0: Accel	0,00 ... 600,00	10,00	s	RW

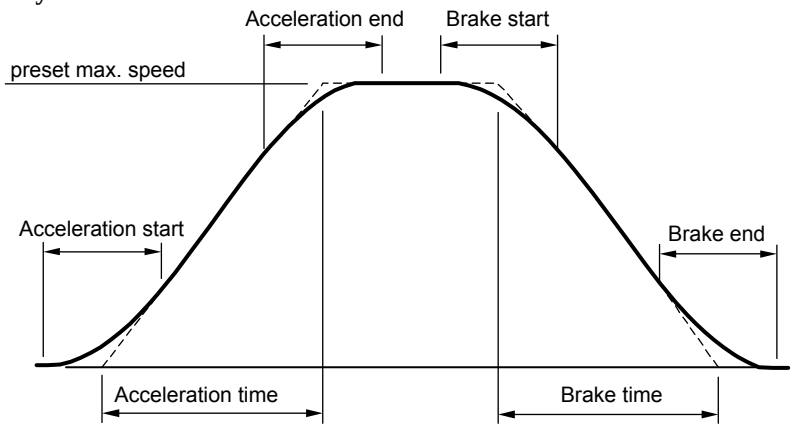
The rotational speed acceleration time selected in Par.119.
However if the drive is at current limit the acceleration will take longer!
The ramps can be activated using Control Par.551-554 (Bit 7-9) or Par.566.

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
121	Ramp 0: Decel	0,00 ... 600,00	10,00	s	RW

Delay period for rotational speedselected using Par.119.
If the drive is at current limit, the delay will be extended!
The ramps can be activated using Control Par.551-554 (Bit 7-9) or Par.566.

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
122	Ramp 0: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW

S-curve at the start of acceleration.
The S-curves are currently not available!



06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
123	Ramp 0: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW

S-curve time at the end of acceleration.

See curve in Par.122!

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
124	Ramp 0: S-Decel-Start	0,00 ... 600,00	0,00	s	RW

S-curve time at the start of delay.

See curve in Par.122!

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
125	Ramp 0: S-Decel-End	0,00 ... 600,00	0,00	s	RW

S-curve time at the start of delay.

See curve in Par.122!

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
126	Ramp 1: Accel	0,00 ... 600,00	10,00	s	RW
127	Ramp 1: Decel	0,00 ... 600,00	10,00	s	RW
128	Ramp 1: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
129	Ramp 1: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
130	Ramp 1: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
131	Ramp 1: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
132	Ramp 2: Accel	0,00 ... 600,00	10,00	s	RW
133	Ramp 2: Decel	0,00 ... 600,00	10,00	s	RW
134	Ramp 2: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
135	Ramp 2: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
136	Ramp 2: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
137	Ramp 2: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
138	Ramp 3: Accel	0,00 ... 600,00	10,00	s	RW
139	Ramp 3: Decel	0,00 ... 600,00	10,00	s	RW
140	Ramp 3: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
141	Ramp 3: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
142	Ramp 3: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
143	Ramp 3: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
144	Ramp 4: Accel	0,00 ... 600,00	10,00	s	RW
145	Ramp 4: Decel	0,00 ... 600,00	10,00	s	RW
146	Ramp 4: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
147	Ramp 4: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
148	Ramp 4: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
149	Ramp 4: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
150	Ramp 5: Accel	0,00 ... 600,00	10,00	s	RW
151	Ramp 5: Decel	0,00 ... 600,00	10,00	s	RW
152	Ramp 5: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
153	Ramp 5: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
154	Ramp 5: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
155	Ramp 5: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
156	Ramp 6: Accel	0,00 ... 600,00	10,00	s	RW
157	Ramp 6: Decel	0,00 ... 600,00	10,00	s	RW
158	Ramp 6: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
159	Ramp 6: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
160	Ramp 6: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
161	Ramp 6: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

06: Ramps					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
162	Ramp 7: Accel	0,00 ... 600,00	10,00	s	RW
163	Ramp 7: Decel	0,00 ... 600,00	10,00	s	RW
164	Ramp 7: S-Accel-Rise	0,00 ... 600,00	0,00	s	RW
165	Ramp 7: S-Accel-Reach	0,00 ... 600,00	0,00	s	RW
166	Ramp 7: S-Decel-Start	0,00 ... 600,00	0,00	s	RW
167	Ramp 7: S-Decel-End	0,00 ... 600,00	0,00	s	RW

See Par.120-125 (Ramp 0)

7. Parameter Group 7

07: regulator dynamics

Dynamc adjustment of the PID-speed regulator and the field-shunting controls.

The adjustment allows a variation of the dynamic components between two defined speeds! E.g. the lower the speed, the lower the dynamic response, the higher the speed the higher the dynamic response.

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
170	P N	0 ... 32767	---		RC

Display of current proportional sensitivity with 15 bit scaling

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
171	I N	0 ... 32767	---		RC

Display of current integral time with 15 bit scaling

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
172	D N	0 ... 32767	---		RC

Display of current differential gain with 15 bit scaling

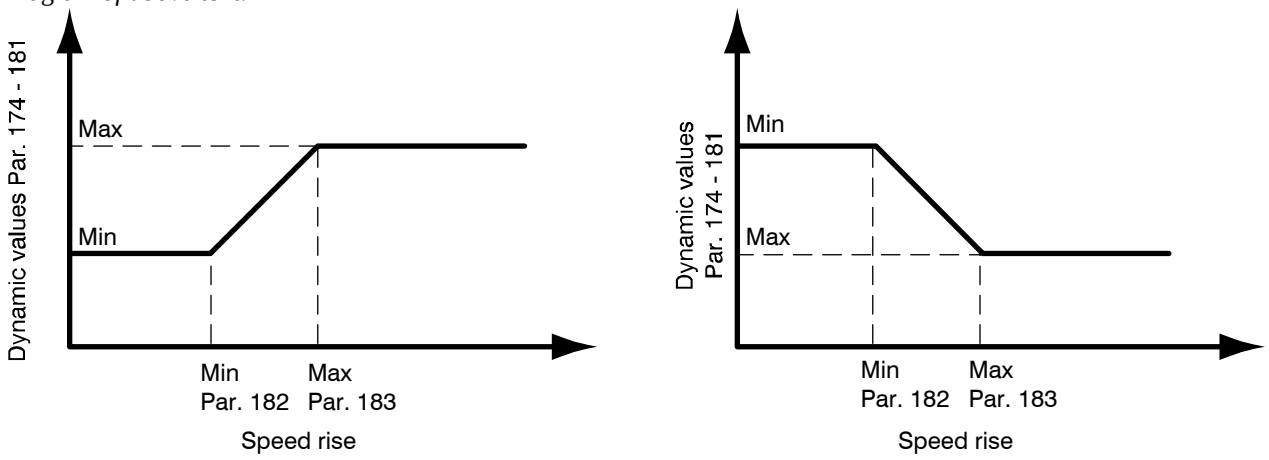
07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
173	Dt N	0 ... 32767	---		RC

Display of current differential time with 15 bit scaling

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
174	Speed P_Min	0,0 ... 100,0	2,0	---	RW

Proportional sensitivity of rotational speed=0 to Par.182 (minimum rotational speed threshold).
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

Diagram *of above* text.



07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
175	Speed P_Max	0,0 ... 100,0	10,0	---	RW

Proportional sensitivity of rotational speed=0 to Par.183 (Maximum rotational speed threshold) to maximum rotational speed.
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve, Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
176	Speed I_Min	0,0 ... 1000,0	200,0	ms	RW

Integral time of rotational speed=0 to Par.182 (Minimum rotational speed threshold).
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
177	Speed I_Max	0,0 ... 1000,0	50,0	ms	RW

Integral time of rotational speed=0 to Par.183 (rotational speed threshold max.) to max. rotational speed.
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
178	Speed D_Min	0,0 ... 100,0	2,0	---	RW

Differential gain of of rotational speed=0 to Par.182 (rotational speed threshold min.)
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
179	Speed D_Max	0,0 ... 100,0	3,0	---	RW

Differential gain of rotational speed=0 to Par.183 (rotational speed threshold max.) to max. rotational speed.
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
180	Speed Dt_Min	0,0 ... 1000,0	100,0	ms	RW

Differential time (rate time) of rotational speed=0 to Par.182 (rotational speed threshold min.).
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
181	Speed Dt_Max	0,0 ... 1000,0	50,0	ms	RW

Differential time (rate time) of rotational speed=0 Par.183 (rotational speed threshold max.) to max. rotational speed.
The sensitivity changes linearly with the rotational speed between “Minimum rotational speed threshold” and “Maximum rotational speed threshold” (Par.182-Par.183).

See curve Par. 174

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
182	Speed Min_Threshold	0,0 ... Par.75	30,0	rpm	RW
183	Speed Max_Threshold	0,0 ... Par.75	100,0	rpm	RW

The PID parameters change to the selected PID min-max. values linearly with the rotational speed between Par.182 and 183 (“Minimum rotational speed threshold” and “Rotational speed threshold max.”)!

See also parameters Par.174 –181

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
184	Speed P_Factor	1 ... 10	4		RC

Display of the binary position shift to the left by Par.170 (P component 15 Bit).

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
185	Speed D_Factor	1 ... 10	4		RC

Display of the binary position shift to the left by Par.171 (D component 15 Bit).

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
195	Flux Weakening : P	0,0 ... 100,0	5,0	---	RW

Proportional sensitivity of field shunting controls from nominal speed of motor to max. rotational speed.

07: Control Dynamics					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
196	Flux Weakening: I	0,0 ... 1000,0	100,0	ms	RW

Integral time of the field shunting controls from nominal speed of motor to max. rotational speed.

8. Parameter Group 8

08: Digital inputs and outputs
Status display for the digital in- and outputs. Setting the digital outputs.
The physical and logical state of the outputs can be checked.
The actual conditon of the outputs can be check1ed and statically set. (e.g. for signal checking)

08: Digital I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
200	DI-Physical	0000h ... 0F3Fh	---	[bits]	R

Physical state of the digital inputs.
0=low, 1=high

Bit	Name	Notes
0	Terminal 52	
1	Terminal 53	
2	Terminal 54	
3	Terminal 55	
4	Terminal 56	
5	Terminal 57	
6		
7		
8	Terminal 2	
9	Terminal 3	
10	Terminal 4	
11	Terminal 5	
12		
13		
14		
15		

08: Digital I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
201	Master/Slave DI	0000h ... 000Fh	---	[bits]	R

Physical state of the inputs.
0=low, 1=high

Bit	Name	Notes
0	Z0 Master	Zero impulse from the Master drive
1	Z0 Slave	Zero impulse from the Slave drive
2	AI Master	A-track from the Master drive
3	BI Master	B-track from the Master drive

08: Digital I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
202	DI-Logical	0000h ... 0F3Fh	---	[bits]	R

Logical state of the inputs.
0=low, 1=high

Bit	Name	Notes
0	Terminal 52	
1	Terminal 53	
2	Terminal 54	
3	Terminal 55	
4	Terminal 56	
5	Terminal 57	
6		
7		
8	Terminal 2	
9	Terminal 3	
10	Terminal 4	
11	Terminal 5	
12		
13		
14		
15		

08: Digital I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
210	DO Set	0000h ... 031Fh	0000h	[bits]	RW

The digital outputs can be set manually. (e.g. for the purpose of checking the signal)
0=low, 1=high

Bit	Name	Notes
0	Terminal 60	
1	Terminal 61	
2	Terminal 63	
3	Terminal 64	
4	Terminal 65	
5		
6		
7		
8	Terminal 11	
9	Terminal 13	
10		
11		
12		
13		
14		
15		

08: Digital I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
211	DO Set Actual	0000h ... 031Fh	---	[bits]	R

Current state of the digital outputs.
0=low, 1=high

Bit	Name	Notes
0	Terminal 60	
1	Terminal 61	
2	Terminal 63	
3	Terminal 64	
4	Terminal 65	
5		
6		
7		
8	Terminal 11	
9	Terminal 13	
10		
11		
12		
13		
14		
15		

9. Parameter group 9

09: Analog inputs and outpts
Setting the parameters for and displaying the status of analog inputs and outputs.
Setpoints or actual value parameters can be freely assigned to analog inputs and outputs!
All the well-established probe /sensor types can be selected in case of temperature probe/sensor inputs!

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
220	A-IN 8 Mode	[00] 0~10V ... [02] 4~20mA	[00] 0~10V		RW

Analog input terminal 8:
Selecting the physical input parameter. (unipolar)

Analog inputs are configured to a voltage in the factory; **when used as a current input (e.g. 4-20mA), the dip switch position of the input has to be altered!** (See wiring diagram)

Nr.	Name	Notes
0	0-10V	
1	0-20mA	
2	4-20mA	

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
221	A-IN 8 Offset	0 ... 32767	---		RW

Analog input terminal 8: zero point or offset position.

Preset in the factory.
However should it be necessary to change the settings, following procedure should be followed!
-Set Par. 221 (zero point) to 0
-Read off Par. 224 (current value)
-Enter the same number for Par. 221
-If necessary, fine tune until Par. 224 is set to 0

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
222	A-IN 8 Gain	0,00 ... 105,00	---		RW

Analog input terminal 8: Amplification

Preset in the factory.
However should it be necessary to change the settings, following procedure should be followed!

-Achieve maximum input parameter (e.g. 10V)
-Check if the target parameter has reached the desired value (e.g. “Rotational speed setpoint” Par.100)
-Change amplification from the required to the actual rotational speed setpoint using the same ratio.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
223	A-IN 8 Dest-Parameter	0 ... 65535	521		RW

Analog input terminal 8: target parameters

Is currently programmed to the rotational speed setpoint and can therefore not be parameterised!

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
224	A-IN 8 Act Value	0 ... 32767	---		R

Analog input terminal 8: current value, standardized to 15 Bit.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
230	A-IN 68 Mode	[00] 0~10V ... [05] 0~-10V	[00] 0~10V		RW
231	A-IN 68 Offset	0 ... 32767	---		RW
232	A-IN 68 Gain	0,00 ... 105,00	100,00		RW
233	A-IN 68 Dest-Parameter	0 ... 65535	---		RW
234	A-IN 68 Act Value	-32767 ... 32767	---		R

Analog input terminal 68-72: (Bipolar)
Same as Par.220-224 except that negative values are possible.

Nr.	Name	Notes
0	0-10V	
1	0-20mA	
2	4-20mA	
3	+10-(-10V)	
4	-10-(+10V)	
5	0-(-10V)	

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
240	A-IN 70 Mode	[00] 0~10V ... [05] 0~-10V	[00] 0~10V		RW
241	A-IN 70 Offset	0 ... 32767	---		RW
242	A-IN 70 Gain	0,00 ... 105,00	100,00		RW
243	A-IN 70 Dest-Parameter	0 ... 65535	---		RW
244	A-IN 70 Act Value	-32767 ... 32767	---		R

Analog input terminal 70
Same as Par.220-224 except that negative values are possible.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
250	A-IN 72 Mode	[00] 0~10V ... [05] 0~-10V	[00] 0~10V		RW
251	A-IN 72 Offset	0 ... 32767	---		RW
252	A-IN 72 Gain	0,00 ... 105,00	100,00		RW
253	A-IN 72 Dest-Parameter	0 ... 65535	---		RW
254	A-IN 72 Act Value	-32767 ... 32767	---		R

.
Analog input terminal 72:
Same as Par.220-224 except that negative values are possible.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
260	A-OUT 74 Mode	[00] 0~10V ... [05] 0~-10V	[00] 0~10V		RW

Analog output terminal 74:
Selecting the physical output variable. (Bipolar)

Analog outputs are configured to a voltage in the factory; **when used as a current outputput (e.g. 4-20mA), the dip switch position of the output has to be altered!** (See wiring diagram)

Nr.	Name	Notes
0	0-10V	
1	0-20mA	
2	4-20mA	
3	+10-(-10V)	
4	-10-(+10V)	
5	0-(-10V)	

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
261	A-OUT 74 Offset	-32767 ... 32767	---		RW

Analog output terminal 74: Zero point or offset position.

Preset in the factory.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
262	A-OUT 74 Gain	0,00 ... 105,00	100,00		RW

Analog output terminal 74: Amplification

Preset in the factory.
However should it be necessary to change the settings, following procedure should be followed!
Measure the physical value (V or mA) and set to required value using the above parameters.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
263	A-OUT 74 Src-Parameter	0 ... 1200	520		RW

Analog output terminal 74: Source parameter

Establishing which parameter should be linked to the analog output.
Example: enter “Current rotational speed”: parameter number (ID) 520.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
264	A-OUT 74 Norm Value	0 ... 32767	---		RW

Analog output terminal 74: Standardised value equals max. analog value.

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
265	A-OUT 74 Act Value	-32767 ... 32767	---		R

Analog output terminal 74: Current value standardised to 16 bit

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
270	A-OUT 76 Mode	[00] 0~10V ... [05] 0~-10V	[00] 0~10V		RW
271	A-OUT 76 Offset	-32767 ... 32767	---		RW
272	A-OUT 76 Gain	0,00 ... 105,00	100,00		RW
273	A-OUT 76 Src-Parameter	0 ... 1200	522		RW
274	A-OUT 76 Norm Value	0 ... 32767	---		RW
275	A-OUT 76 Act Value	-32767 ... 32767	---		R

Analog output terminal 76:
As for Par. 260 – 265

09: Analog I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
280	Temp22 Motor Sensor Type	[00] Klixon ... [04] PTC-Thermistor	[00] Klixon		RW
281	Temp22 Motor Offset	-320,0 ... 320,0	0,0[1)]	°Cel	RW
282	Temp22 Motor Gain	0,0 ... 200,0	100,0[1)]		RW
283	Temp22 Motor Act Value	-320,0 ... 320,0	0,0	°Cel	R
285	Temp21 Motor pre warn Sensor Type	[00] Klixon ... [04] PTC-Thermistor	[01] PT100		RW
286	Temp21 Motor pre warn Offset	-320,0 ... 320,0	0,0[1)]	°Cel	RW
287	Temp21 Motor pre warn Gain	0,0 ... 200,0	100,0[1)]		RW
288	Temp21 Motor pre warn Act Value	-320,0 ... 320,0	---	°Cel	R
290	Temp Drive Sensor Type	[00] Klixon ... [04] PTC-Thermistor	[01] PT100		RW
291	Temp Drive Offset	-320,0 ... 320,0	0,0[1)]	°Cel	RW
292	Temp Drive Gain	0,0 ... 200,0	100,0[1)]		RW
293	Temp Drive Act Value	-320,0 ... 320,0	---	°Cel	R

Zero point or. offset setting when using a PT-100 or a KTY.
Because the measurement can be corrupted by the resistivity of the cable.
(at complete delivery, adjusted by TAE)

Select motor temperature sensor for terminal 21, 22
Select drive temperature sensor

Nr.	Name	Notes
0	Klixon	Thermal switch (break contact)
1	PT-100	Thermal resistance 100Ohm at 0°C
2	KTY-83	Note the input amplification. (jumper on the encoder board, see wiring diagram)
3	KTY-84	Note the input gain. (jumper on the encoder board, see wiring diagram)
4	PTC-Thermistor	In case the resistance is higher than 150Ohm at 25°C: Take the input amplification into account. (jumper on the encoder board, see wiring diagram)

10. Parameter Group 10

10: SPC function I/O

Logical allocation of digital inputs and outputs or bit-addressable parameters.
The SPC function consists of a function component with 32 inputs and 32 outputs which is parameterized with the following functions:

- **Connects a component's inputs with the bit-addressable parameters (e.g. digital inputs)**
- **Connects a component's outputs with the bit-addressable parameters (e.g. digital outputs)**
- **Component-internal connection of an output with a random number of outputs (e.g. Output 2 with Output 2 and 3 [inputs are coded])**
- **Define the polarity of the inputs (high or low activity)**
- **Set/reset function of the outputs with varying inputs (flip/flop)**
- **Edge detection of the inputs (polarity determines whether high or low edge)**
- **Define the polarity of the outputs (high or low activity)**
- **Display the number of utilised inputs and outputs**
- **Display the utilised inputs and outputs**
- **Display the inputs and outputs that are currently in use**

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
300	PLC-IO CMD	0000h ... 00F3h	0000h	[bits]	RW

Bit	Name	Notes
0	Reload CFG	Re-load the parameters / configuration
1	Clear CFG	Reset the parameters / configuration
2		
3		
4	Susp: All	Stop all functions
5	Susp: GetIN	Stop reading the inputs
6	Susp: Calc	Stop calculating the outputs
7	Susp: SetOut	Stop setting the outputs
8…15		

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
301	PLC-IO STAT	0000h ... 001Fh	0000h	[bits]	R

Bit	Name	Notes
0	Busy GetIN	Status: Read inputs
1	Busy Calc	Status: Calculate the outputs
2	Busy SetOut	Status: Set the outputs
3	Busy Reset	Status: Reset
4	Error:Link	Error in parameterised I/O connection (invalid parameter)
5…15		

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
302	Input Param ID/Bit 01	0 ... 200000	20008		RW
303	Input Param ID/Bit 02	0 ... 200000	20009		RW
304	Input Param ID/Bit 03	0 ... 200000	20010		RW
305	Input Param ID/Bit 04	0 ... 200000	20011		RW
306	Input Param ID/Bit 05	0 ... 200000	56000		RW
307	Input Param ID/Bit 06	0 ... 200000	56008		RW
308	Input Param ID/Bit 07	0 ... 200000	20000		RW
309	Input Param ID/Bit 08	0 ... 200000	20001		RW
310	Input Param ID/Bit 09	0 ... 200000	20002		RW
311	Input Param ID/Bit 10	0 ... 200000	20003		RW
312	Input Param ID/Bit 11	0 ... 200000	20004		RW
313	Input Param ID/Bit 12	0 ... 200000	20005		RW
314	Input Param ID/Bit 13	0 ... 200000	56002		RW
315	Input Param ID/Bit 14	0 ... 200000	56005		RW
316	Input Param ID/Bit 15	0 ... 200000	56010		RW
317	Input Param ID/Bit 16	0 ... 200000	0		RW
318	Input Param ID/Bit 17	0 ... 200000	0		RW
319	Input Param ID/Bit 18	0 ... 200000	0		RW
320	Input Param ID/Bit 19	0 ... 200000	0		RW
321	Input Param ID/Bit 20	0 ... 200000	0		RW
322	Input Param ID/Bit 21	0 ... 200000	0		RW
323	Input Param ID/Bit 22	0 ... 200000	0		RW
324	Input Param ID/Bit 23	0 ... 200000	0		RW
325	Input Param ID/Bit 24	0 ... 200000	0		RW
326	Input Param ID/Bit 25	0 ... 200000	0		RW
327	Input Param ID/Bit 26	0 ... 200000	0		RW
328	Input Param ID/Bit 27	0 ... 200000	0		RW
329	Input Param ID/Bit 28	0 ... 200000	0		RW
330	Input Param ID/Bit 29	0 ... 200000	0		RW
331	Input Param ID/Bit 30	0 ... 200000	0		RW
332	Input Param ID/Bit 31	0 ... 200000	0		RW
333	Input Param ID/Bit 32	0 ... 200000	0		RW

Connecting the inputs of the SPC component with bit addressable parameters (e.g. digital inputs)
Example: Link SPC-input 01 (Par.302) with digital input “terminal 2” (Par.200 bit 08).
Enter **20008** in Par. 302!

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
334	Output Param ID/Bit 01	0 ... 200000	55200		RW
335	Output Param ID/Bit 02	0 ... 200000	55201		RW
336	Output Param ID/Bit 03	0 ... 200000	55202		RW
337	Output Param ID/Bit 04	0 ... 200000	55210		RW
338	Output Param ID/Bit 05	0 ... 200000	21008		RW
339	Output Param ID/Bit 06	0 ... 200000	21009		RW
340	Output Param ID/Bit 07	0 ... 200000	56500		RW
341	Output Param ID/Bit 08	0 ... 200000	56501		RW
342	Output Param ID/Bit 09	0 ... 200000	55214		RW
343	Output Param ID/Bit 10	0 ... 200000	55213		RW
344	Output Param ID/Bit 11	0 ... 200000	21000		RW
345	Output Param ID/Bit 12	0 ... 200000	21001		RW
346	Output Param ID/Bit 13	0 ... 200000	21004		RW
347	Output Param ID/Bit 14	0 ... 200000	21003		RW
348	Output Param ID/Bit 15	0 ... 200000	21002		RW
349	Output Param ID/Bit 16	0 ... 200000	55213		RW
350	Output Param ID/Bit 17	0 ... 200000	0		RW
351	Output Param ID/Bit 18	0 ... 200000	0		RW
352	Output Param ID/Bit 19	0 ... 200000	0		RW
353	Output Param ID/Bit 20	0 ... 200000	0		RW
354	Output Param ID/Bit 21	0 ... 200000	0		RW
355	Output Param ID/Bit 22	0 ... 200000	0		RW
356	Output Param ID/Bit 23	0 ... 200000	0		RW
357	Output Param ID/Bit 24	0 ... 200000	0		RW
358	Output Param ID/Bit 25	0 ... 200000	0		RW
359	Output Param ID/Bit 26	0 ... 200000	0		RW
360	Output Param ID/Bit 27	0 ... 200000	0		RW
361	Output Param ID/Bit 28	0 ... 200000	0		RW
362	Output Param ID/Bit 29	0 ... 200000	0		RW
363	Output Param ID/Bit 30	0 ... 200000	0		RW
364	Output Param ID/Bit 31	0 ... 200000	0		RW
365	Output Param ID/Bit 32	0 ... 200000	0		RW

Connecting the outputs of the SPC component with bit addressable parameters (e.g. digital outputs)
Example: Link SPC output 06 (Par.339) with digital output “terminal 13” (Par.210 Bit 09).

Enter **21009** in Par.339!

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
366	Conn Out 01	00000000h ... FFFFFFFFh	00000001h	[bits]	RW
367	Conn Out 02	00000000h ... FFFFFFFFh	00000006h	[bits]	RW
368	Conn Out 03	00000000h ... FFFFFFFFh	00000004h	[bits]	RW
369	Conn Out 04	00000000h ... FFFFFFFFh	00000008h	[bits]	RW
370	Conn Out 05	00000000h ... FFFFFFFFh	00000010h	[bits]	RW
371	Conn Out 06	00000000h ... FFFFFFFFh	00000020h	[bits]	RW
372	Conn Out 07	00000000h ... FFFFFFFFh	00000040h	[bits]	RW
373	Conn Out 08	00000000h ... FFFFFFFFh	00000080h	[bits]	RW
374	Conn Out 09	00000000h ... FFFFFFFFh	00000100h	[bits]	RW
375	Conn Out 10	00000000h ... FFFFFFFFh	00000200h	[bits]	RW
376	Conn Out 11	00000000h ... FFFFFFFFh	00000010h	[bits]	RW
377	Conn Out 12	00000000h ... FFFFFFFFh	00000020h	[bits]	RW
378	Conn Out 13	00000000h ... FFFFFFFFh	00001000h	[bits]	RW
379	Conn Out 14	00000000h ... FFFFFFFFh	00002000h	[bits]	RW
380	Conn Out 15	00000000h ... FFFFFFFFh	00004000h	[bits]	RW
381	Conn Out 16	00000000h ... FFFFFFFFh	00000400h	[bits]	RW
382	Conn Out 17	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
383	Conn Out 18	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
384	Conn Out 19	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
385	Conn Out 20	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
386	Conn Out 21	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
387	Conn Out 22	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
388	Conn Out 23	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
389	Conn Out 24	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
390	Conn Out 25	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
391	Conn Out 26	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
392	Conn Out 27	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
393	Conn Out 28	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
394	Conn Out 29	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
395	Conn Out 30	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
396	Conn Out 31	00000000h ... FFFFFFFFh	00000000h	[bits]	RW
397	Conn Out 32	00000000h ... FFFFFFFFh	00000000h	[bits]	RW

Internal SPC component connection for an output with a random number of inputs.
Example: Connect output 2 to inputs 2 and 3 [inputs are coded]
Par. 367: Set bit 01 and bit 02 to “1”! (00000006h)
Bit 00: Input 1
:
Bit 31: Input 32

10: PLC I/O

ID	Name	Value-Range	Default-Value	Unit	Access
400	IN Polarity	00000000h ... FFFFFFFFh	FFFFFFFFh	[bits]	RW

Define the polarity of the inputs (high or low activity)
High activity=1, low activity=0
Example: input 5=high activity and input 6=low activity
Set bit 4 to "1" and Bit 5 to "0"!

Bit 00: Input 1
:
Bit 31: Input 32

10: PLC I/O					
ID	Name	Value-Range	Default-Value	Unit	Access
401	IN Set/Reset	00000000h ... FFFFFFFFh	FFFFFFFFh	[bits]	RW

Set/reset function of outputs with varying inputs (flip/flop)
If inputs have been established to be pulse-edges (Par.402) then outputs can be switched ON by inputs and OFF by other inputs!
Set=1, Reset=0
Example: **"Latch circuit"**
-Output 2 is switched on (Set) by input 2 and switched off (Reset) by input 3.
-Connect output 2 with input 2 and input 3 (Par.367).
-Set bit 1 to "1", bit 2 to "0"!
-High or low pulse-edge is determined by polarity (Par.400).

Bit 00: input 1
:
Bit 31: input 32

With static switching (non pulse-edges) each bit must be switched (set) to "1"!

10: PLC I/O					
ID	Name	Value-Range	Default-Value	Unit	Access
402	IN Edge	00000000h ... FFFFFFFFh	00000000h	[bits]	RW

Edge detection of inputs (high or low edge defines the polarity [Par.400] of the respective inputs).
Edge detection = 1
Static detection = 0

Example: See Par.401
Set bit 1 und it 2 to "1"!

Bit 00: Input 1
:
Bit 31: Input 32

10: PLC I/O

ID	Name	Value-Range	Default-Value	Unit	Access
403	OUT Polarity	00000000h ... FFFFFFFFh	FFFFFFFFh	[bits]	RW

Defining the polarity of the outputs (high or low)
High activity=1, low activity=0
Example: Output 5=high activity and output 6=low activity
Set bit 4 to “1” and bit 5 to “0”!

Bit 00: Output 1
:
Bit 31: Output 32

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
410	IO N_Inputs	0 ... 32	---		R

Displays number of used inputs.

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
411	IO N_Outputs	0 ... 32	---		R

Displays number of used outputs.

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
412	Valid Input	00000000h ... FFFFFFFFh	---	[bits]	R

Displays used inputs.
Used = 1, Unused = 0
Bit 00: Input 1
:
Bit 31: Input 32

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
413	Valid Output	00000000h ... FFFFFFFFh	---	[bits]	R

Displays used outputs.
Used = 1, Unused = 0
Bit 00: Output 1
:
Bit 31: Output 32

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
414	IO_ActIN	00000000h ... FFFFFFFFh	---	[bits]	R

Status display of currently active inputs.
Active = 1
Bit 00: Input 1
:
Bit 31: Input 32

10: PLC I/O					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
415	IO_ActOUT	00000000h ... FFFFFFFFh	---	[bits]	R

Status display of current active outputs.
Active = 1
Bit 00: Output 1
:
Bit 31: Output 32

11. Parameter Group 11

11: Monitoring limits
Static and paramaterable monitoring of various actual conditions of the drive.
Setting the threshold values of conditons which trigger an alarm: temperatures, voltages, currents and rotational speeds!

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
500	Drive Over-Temp Limit	0,0 ... 85,0	80,0	°C	RW

Device heat-sink element temperature limits!
If the temperature rises above a set value the following malfunction message appears **F2 "Device temperature rise". Par. 571 Bit: 5**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
501	Drive Over-Voltage Limit	0 ... 800	780/390	V	R

Maximum intermediate circuit voltage!
If the voltage rises above a set value the following malfunction message appears **F4 "Excess voltage". Par. 571 Bit: 3**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
502	Drive Under-Voltage Limit	0 ... 800	360/205	V	R

Minimum intermediate circuit voltage (acceptable during operation)!
If the voltage drops below a set value the following malfunction message appears **F3 "Undervoltage". Par. 571 Bit: 4**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
503	Drive Over-Current Limit	0,000 ... Par.74	---	A	R

Surge current of regulator. (cutoff current)

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
504	Drive Brake-Chopper Off Voltage	1 ... 800	740/365	V	R

Brake-chopper switches OFF, below the indicated voltage!

Internal brake-chopper is only available for sizes TA-U2 to TA-U15!

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
505	Drive Brake-Chopper On Voltage	1 ... 800	750/375	V	R

Brake-chopper switches ON, above the indicated voltage!

Internal brake-chopper is only available for sizes TA-U2 to TA-U15!

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
506	Motor Max Speed electr.	0,0 ... Par.75	---	rpm	R

Displays maximum electrical motor speed.

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
507	Motor Max Speed mech.	0,0 ... Par.75	---	rpm	R

Displays the maximum mechanical motor speed.

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
508	Motor Over-Temp Limit	0,0 ... 250,0	---	°C	RW

Motor temperature limit!
If the motor temperature rises above a certain limit, following malfunction message appears **F0 "Motor excess temperature" Par. 571 Bit: 12**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
509	Motor Warn Temp Limit	0,0 ... 250,0	---	°C	RW

Motor prewarning temperature limit!
If the motor temperature rises above a certain limit, following message appears **C2 "Motor temperature prewarning". Par. 571 Bit: 13**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
510	Speed detect Limit	0,0 ... Par.75	300,0	rpm	RW

If the rotational speed rises beyond a certain limit, following message appears **"Speed > X". Par. 560 Bit: 3**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
511	Current detect Limit	0,00 ... Par.104	Par.28	A	RW

If the motor current rises above a certain level, following message appears **"Current > X". Par. 560 Bit: 6**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
512	Delayed Message Current limit reached	0,0 ... 1000,0	5,0	s	RW

If the current reaches a certain level (Par.104 or Par.105), following message appears **"Current level reached"** after the above mentioned delay. **Par. 560 Bit: 5**

11: Monitoring-Limits					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
513	Drive Warn Temp Limit	0,0 ... 80,0	75,0	°C	RW

Device prewarning temperature limit!
If the machine temperature rises above a certain limit, following message appears **C1 "Device temperature prewarning". Par. 571 Bit: 6**

12. Parameter Group 12

12: Actual values
Display of important setpoint and actual values at a glance

12: Actual Values					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
520	Act Speed	-Par.75 ... +Par.75	---	rpm	R
521	Ref Speed	-Par.75 ... +Par.75	---	rpm	R
522	Actual Current	0,00 ... Par.104	---	A	R
523	Motor Torque	0,00 ... 21474836,47	---	Nm	R
524	Buss Voltage	0 ... 800	---	V	R
525	Motor Temp. Terminal 22	-320,0 ... 320,0	---	°C	R
526	Motor Pre.-Temp. Terminal 21	-320,0 ... 320,0	---	°C	R
527	Drive Temp.	-267,0 ... 267,0	---	°C	R
528	Actual Lead Speed	- Par 75 ... Par 75	---	rpm	R
529	Machine Speed	0,000 ... 2147483647,000	---		R
530	Act Pulse Frequency	1,00 ... 20,00	---	kHz	R
531	Motor Current U	-Par.74 … +Par.74	---	A	R
532	Motor Current V	-Par.74 … +Par.74	---	A	R
533	Motor Current W	-Par.74 … +Par.74	---	A	R
534	Brake Chopper Volt	0,0 ... 800,0	---	V	R
535	n-Controller Ref Speed	-Par.75 ... +Par.75	---	rpm	R
536	n-Controller Act Speed	-Par.75 ... +Par.75	---	rpm	R
537	n-Controller Deviation	-Par.75 ... +Par.75	---	rpm	R
538	n-Controller Output	-Par.74 … +Par.74	---	A	R
539	Actual Current unfiltered	0,00 ... Par.104	---	A	R
540	ASM minimum flux				
541	ASM rated flux				
542	Flux Weakening	-Par.67 … +Par.67	---	A	R
543	Drive Working minutes				
544	Drive Working hours				
545	Drive Operating minutes				
546	Drive Operating hours	0 ... 59	---	min	R
547	Act Speed	0 ... 2147483647	---	h	R
548	Ref Speed	0 ... 59	---	min	R
549	Actual Current	0 ... 2147483647	---	h	R

13. Parameter Group 13

13: Control words and status words
Inputting and displaying bit addressable control and status parameters

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
550	DrvCtrl Act	0000h ... FFFFh	0000h	[bits]	R

Actual status of control word 1
Control word 1 can be controlled by four different sources (field bus, digital inputs, PG4000 or U-drive Manager)! The bits for the four control words (Par.551 to 554) are incorporated in Control Word 1 or linked (1=dominant).

Bit	Name	Notes
0	Reset	Only possible when the drive is **not** started!
1	Running	Start the drive.
2	Direction CCW	**Motor** turning counter-clockwise
3	Hold	Drive braking with current limit after rotational speed of Nil
4	Preset Speed 1	Fixed speeds 3, 5, 6 and 7 are controlled using binary code from the bit combinations in Bits 4-6. Example: fixed speed 5 = Bit 4 (fixed speed 1) + Bit 6 (fixed speed 4) **See also Par.110-116 and 565**
5	Preset Speed 2	
6	Preset Speed 4	
7	Ramp 1	Ramps 3, 5, 6 and 7 are controlled using binary codes from the bit combinations in Bits 7-9. Example: ramp 3 = Bit 7 (ramp 1) + Bit 8 (ramp 2) **If no bit is triggered then ramp 0 is active! See also Par.566 und parameter group 6**
8	Ramp 2	
9	Ramp 4	
10	Slave Function	Incremental setpoint
11	Change Slave direction	Invert direction of rotation for Slave operation
12	SetDisableController	e.g.: for repair switch function
13	Digital Motorpoti	Switch on motor potentiometer
14	Motorpoti Up	
15	Motorpoti Down	

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
551	DrvCtrl FBus	0000h ... FFFFh	0000h	[bits]	R

Execute control word 1 using field bus.
See Par. 550 for bit assignment

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
552	DrvCtrl D-In	0000h ... FFFFh	0000h	[bits]	R

Execute control word 1 via digital inputs.
See Par. 550 for bit assignment

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
553	DrvCtrl Kpd/PC	0000h ... FFFFh	0000h	[bits]	RW

Execute control word 1 dynamically via PG4000 or U-drive Manager. **(Service-mode)**
Will **not** be saved in the EEPROM using the function "Save parameters!
See Par. 550 for bit assignment

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
554	DrvCtrl Command	0000h ... FFFFh	0000h	[bits]	RW

Execute control word 1 via PG4000 or U-drive Manager for static use.
Will be saved in the EEPROM using the function "Save parameters!
See Par. 550 for bit assignment

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
555	DrvCtrl Flags Act	0000h ... FFFFh	0000h	[bits]	R

Actual status of control word 2.
Control word 2 can be controlled by two different sources (field bus, digital inputs, PG4000 or U-drive Manager)!
The bits for both control words (Par.556 to 557) are incorporated in control word 2 or linked (1=dominant).

Bit	Name	Notes
0	LeadedDeceleration	At stop, the drive delays with the active ramp
1	WaitWithHoldUsingBrake	After a controlled run down (the fall time will be bridged by the holding brake)
2	CurLimitAfterOverloadTimeMotCur	Only allowed for the amount of time set in Par.109.
3	CurLimitAfterOverloadTimeDrvCur	Only allowed for the amount of time set in Par.109.
4	SuppressF6	Suppress error message rotor position sensor for fault diagnosis.
5	SuppressF7	Suppress error message rotation sensor for fault diagnosis
6	InhibiteCW	
7	InhibiteCCW	
8	DisDrvByRefAndActSpEquZero	Controller interlock occurs when setpoint and actual values = 0
9	EnDrvByRefSpeedEquZero	Controller cannot be started when rotation speed setpoint > 0
10	Torquelimit	Torque setpoint can be specified via Par.103
11	External fault shutdown	controller portion takes place when this bit is set
12	NotCatchActSpeed	After switching the drive off and back on again, drive will **not** be intercepted at current rotational speed. The drive will coast to a stop and then starts again.
13	Reserved	
14	FieldWeakeningActive	Will be enabled
15	FeedbackPhaseCorrection	Enables the phase correction (Par.38) of the electronic commutation. **Should only be adjusted if controller is interlocked, otherwise current overloads may occur.**

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
556	DrvCtrl Flags Cfg	0000h ... FFFFh	0000h	[bits]	RW(0)

Recording control word 2 via RS422-interface or PG4000 for fixed parametrisation of the control word.
Will be saved in the EEPROM using the function "Save parameters!
Bit assignment see Par.555.

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
557	DrvCtrl Flags Dyn	0000h ... FFFFh	0000h	[bits]	RW

Recording control word 2 via RS422-interface, PG4000, field bus or digital inputs for dynamic parametrisation of the control word.
Will **not** be saved in the EEPROM using the function “Save parameters!
Bit assignment see Par.555.

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
560	General Stat	0000h ... FFFFh	---	[bits]	R

Displays the most important operation conditions for the drive.

Bit	Name	Notes
0	Ready	
1	Running	
2	Speed > 0	
3	Speed > X	Also see Par.510
4	Powerstage active	
5	I-Limit reached	Also see Par.512
6	I > X	Also see Par.511
7	Generator Mode	
8	Collective Error	
9	Value out of range	
10	Set-Value reached	
11	n-set/n-act in tolerance range	Tolerance = 1% of the max. rotational speed (Par.101)
12	Fieldbus controlling	
13	Current > Motor Rated Current	
14	Field Weakening active	
15	Asynch Control active	Asynchronous motor active

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
561	Motor Stat	0000h ... 000Fh	---	[bits]	R

Display of auto-tuning status (ASM)

Bit	Name	Notes
0	Auto tuning started	
1	Auto tuning and run	
2	Auto tuning finshed	

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
562	Drive Stat	0000h ... FFFEh	---	[bits]	R

Unused

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
565	Spd Prst Sel	[00] --- ... [07] Speed n7	[00] ---	---	RW

Controlling the fixed rotational speed by entering in the fixed rotational speed number (via field bus, PG4000 or RS422 interface).
See also Par.110-116 and 550.

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
566	Ramp Sel	[00] Ramp 0 ... [07] Ramp 7	[00] Rampe 0	---	RW

Controlling the ramps by entering the ramp No. (via field bus, PG4000 or RS422 interface).
See also Par.550 und parameter group 6.

13: Command/Status Words					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
567	Selected Reference Speed Source	[00] Preset Speed ...[08] Positioning	---	---	R

Display of active setpoint reference sources

Nr.	Name	Notes
0	Preset Speed	
1	Analog Inputs	
2		
3	Analog input Terminal 8	
4	Master/Slave	Incremental
5	Motorpoti	
6	Fieldbus	
7		
8	Positioning	

14. Parameter Group 14

14: Error conditions
Display of current errors and warnings.

14: Error-Status					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
570	Control Messages	0000h ... 00DAh	---	[bits]	R

Display of prewarning and conditions which cause the drive to malfunction.

Bit	Name	Notes
0	Drive Temp Prew C1	Controller temperature is close to shut-off! (See Par.513)
1	Motor Temp Prew C2	Motor temperature is close to shut-off! (See Par.509)
2	Value Out Of Range C3	Value outside the permissible value range
3	Emergency Stop C4	No voltage at terminals L+/L- (24VDC)
4	Enable Drive by Ref. Speed Equal Zero C5	Drive can only start when the setpoint = 0! **(See Par.555 Bit 9)**
5	Drive disabled C6	e.g.: repair switch is open
6	Actual Speed GT Speed Calibration C7	e.g.: motor is overshooting
7	Parametring error C8	Physical motor parameters for this type of controller are outside of possible range!
8	Direction inhibited C9	Selected direction of rotation is blocked. **(See Par.555 Bit 6 or 7)**

14: Error-Status					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
571	Failures	0000h ... FFFFh	---	[bits]	R

Error messages which cause the drive to malfunction.

Bit	Name	Notes
0	Overcurrent F1	Short circuit – Incorrect end stage, motor or motor cable or physical data of the motor! (See Par.74)
1	IGBT F9	Defective end stage or short circuit or earth fault at motor connection!
2	Ripple Current F5	Defective intermediate circuit electrolytic capacitor, missing network phase oder brief mains voltage failure!
3	Overvoltage F4	Intermediate circuit voltage too high: brake resistance highly resistive or generating operation without braking unit! (See Par.501)
4	Undervoltage F3	Intermediate circuit voltage too low, failure in mains voltage, missing network phase or defective or non-functioning internal charging relay! (See Par.502)
5	Drive Over Temperature F2	Controller permanently overloaded: ambient temperature too high, non-functioning switching cabinet or equipment ventilation or equipment improperly installed in switching cabinet (heat accumulation). (See Par.500)
6	Drive Temperature Pre-Warning C1	Controller temperature is close to shut-off! (See Par.513)
7	Position Sensor F6	Defective rotor position sensor in motor or defective sensor cable, incorrect connection, or motor or sensor cable incorrectly shielded!
8	Speed Sensor F7	Defective rotation speed sensor in motor or defective sensor cable, incorrect connection, or motor or sensor cable incorrectly shielded or mix-up in Tracks A and B!
9	Electronic Failure F8	Internal processor is not working!
10	Drive disabled C6	e.g.: repair switch is open
11	Emergency Stop C4	No voltage at terminals L+/L- (24VDC)
12	Motor Over Temperature F0	Motor permanently overloaded, defective temperature probe or probe wire!
13	Motor Temperature Pre-Warning C2	Motor temperature is close to shut-off! (See Par.509)
14	Brake FeedBack Signal Error E3	Feedback: Incorrect electromechanical brake! (See parameter group 20)
15	External Error E1	Error caused externally! (e.g.: overload relay from external motor fan)

14: Error-Status					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
572	DSP_Errors	0000h ... FFFFh	0000h	[bits]	R
573	StatusParaError	0000h ... FFFFh	0000h	[bits]	R
574	StatusParaError2	0000h ... FFFFh	0000h	[bits]	R
575	StatusParaError3	0000h ... 1FFFh	0000h	[bits]	R
576	StatusParaError4	0000h ... 001Fh	0000h	[bits]	R

Par.572 – 576 are used for TAE-internal diagnostics

15. Parameter Group 15

15: Communication
Displaying and configuring field bus systems and RS422 or RS485 interface.
Also see: U-Drive CANopen/Profibus Option - Commissioning and Settings Instructions

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
600	Device ID	0 ... 126	---		RW

Device address for field bus systems and networkable RS422 or RS485 interfaces.
Please take the restrictions and requirements for the respective fieldbus type into account
Not required for U-Drive Manager!

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
601	SSC-Baudrate	0 ... 65535	38400		RW

Not required when using profibus. (Automatically set by PB-Master)
May be required for other field bus systems and serial interfaces.

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
610	FBus Type	[00] None ... [08] EtherNetPCBoard	---		R

Display of the installed Field Bus option.

Nr.	Name	Note
0	None	
2	CANopen	
4	Profibus	
8	Ethernet	

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
611	Profibus Command word	0000h ... 07FFh	---	[bits]	R

Display of Profibus control word.

Bit	Name	Note	
0	BusCmON	0=Stop	
1	BusCmN_AUS2	Not supported, must be set to 1	
2	BusCmN_AUS3	Not supported, must be set to 1	
3	BusCmEnableOperation	0=In descending order, as programmed	
4	BusCmNoQuickStop_HLG	0=Set ramp generator exit to 0	
5	BusCmEnable_N_HLG2	Not supported, must be set to 1	
6	BusCmEnableSetPoint	0= Set ramp generator input to 0	
7	BusCmResetError	Reset fault	
8	Inching 1	Fixed rotational speed 1	If both are 1 = Fixed rotational speed 3
9	Inching 2	Fixed rotational speed 2	
10	Controled by Profibus		
11			
12			
13			
14			
15			

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
612	Profibus Status word	0000h ... 07FFh	---	[bits]	R

Display of Profibus status word.

Bit	Name	Note
0	BusStReadyToSwitchON	Electronic voltage available
1	BusStReadyToSwitchOperate	Intermediate circuit loaded
2	BusStDriveEnabled	End stage enabled
3	BusStError	0 = No fault
4	BusStNo_AUS2	Not supported
5	BusStNo_AUS3	Not supported
6	BusStStartUpLockOut	End stage blocked C4 or C6
7	BusStWarning	0 = No warning
8	BusStSpeedToleranceRange	Within tolerance range
9	BusStControlledThroughProfibus	Profibus active
10	BusStnReached	0 = Actual rotational speed different from setpoint speed
11		
12		
13		
14		
15		

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
613	Profibus configuration	0000h ... FFFFh	---	[bits]	R

Display of current baudrate and PPO type.

Bit	Name	Note
0	12 MBaud	
1	6 MBaud	
2	3 MBaud	
3	1,5 MBaud	
4	500 KBaud	
5	187,5 KBaud	
6	93,75 KBaud	
7	45,45 KBaud	
8	19,2 KBaud	
9	9,6 KBaud	
10	PPO-Overflow	PPO content larger than selected PPO type
11	PPO-Typ1	
12	PPO-Typ2	
13	PPO-Typ3	
14	PPO-Typ4	
15	PPO-Typ5	

Baudrate and PPO types will be transmitted by Profibus master on initialisation!

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
618	FBus Speed Decimals	-1 ... 3	0		RW

Number of required rotational speed positions after decimal point during fieldbus transmission.

Example:2000/min

Value=1: Rotational speed = 2000.0/min corresponds with transmission value = 20000
Value=0: Rotational speed = 2000/min corresponds with transmission value = 2000

Transmission value may not exceed the number 32767 (15Bit)!

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
619	FBus Current Decimals	-1 ... 3	1		RW

Number of required current and **torque** positions after the decimal point during fieldbus transmission.

Example: 200A
Value=1: Current = 200.0A corresponds with transmission value = 2000
Value=0: Current = 200A corresponds with transmission value = 200

Transmissison value must not fall short of the number 32767 (15Bit)!

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
620	Tx PDO 1	-1 ... 3000	0		RW
621	Tx PDO 2	-1 ... 3000	0		RW
622	Tx PDO 3	-1 ... 3000	0		RW
623	Tx PDO 4	-1 ... 3000	0		RW
624	Tx PDO 5	-1 ... 3000	0		RW
625	Tx PDO 6	-1 ... 3000	0		RW
626	Tx PDO 7	-1 ... 3000	0		RW
627	Tx PDO 8	-1 ... 3000	0		RW

8 data words (16 Bit) can be **transmitted** by the drive in a bus cycle to the fieldbus master (SPC). (Mapping).
The respective content of the parameters are received in the aforementioned order sequence by entering the parameter number.

Examples: CANopen-PDO Mapping or Profibus-PPO transmission.

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
630	Rx PDO 1	-1 ... 3000	0		RW
631	Rx PDO 2	-1 ... 3000	0		RW
632	Rx PDO 3	-1 ... 3000	0		RW
633	Rx PDO 4	-1 ... 3000	0		RW
634	Rx PDO 5	-1 ... 3000	0		RW
635	Rx PDO 6	-1 ... 3000	0		RW
636	Rx PDO 7	-1 ... 3000	0		RW
637	Rx PDO 8	-1 ... 3000	0		RW

8 data words (16 Bit) from field bus master (SPC) can be received by the drive during a bus cycle. (Mapping)
The respective content of the parameters are received in the aforementioned order sequence by entering the parameter number.

Examples: CANopen-PDO Mapping or Profibus-PPO transmission.

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
640	CO-Baudrate	[00] BAUD_1000 ... [08] BAUD_10	[02] BAUD_500		RW

Selecting the baudrate when using **CANopen**.

Nr.	Name	Bemerkung
0	1000 KBaud	
1	800 KBaud	
2	500 KBaud	
3	250 KBaud	
4	125 KBaud	
5	100 KBaud	
6	50 KBaud	
7	20 KBaud	
8	10 KBaud	

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
641	CO-Control	0000h ... F3FFh	0000h	[bits]	RW

Various functions in the CanOpen module can be activated within the control word.

Bit	Designation	Function/Meaning
0	Reset	Set baudrat, reload PDO mapping, delete Bus-Off Flag
1	SetBaudrate	Baudrate in [640] is adopted
2	StopCan	
3	StartCan	
4	SetHeartbeat	Heartbeat-Time in [643] is adopted
5	Reload PDO Mapping	Mapping entries in [620 … 627, 630 … 637] are adopted
6	SetNodeState	Manually set NodeState (only for test purposes!)
7	CustomCobWrite	Write value from [649] into object directory (see below)
8	Reset PDO-Parameters	
9	Reload PDO-Parameters	
10		
11		
12	TxPDO 1	Send PDO 1
13	TxPDO 2	Send PDO 2
14	TxPDO 3	Send PDO 3
15	TxPDO 4	Send PDO 4

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
642	CO-Driver State	0000h ... 007Fh	0000h	[bits]	R

Current status of the CANopen module

Bit	Designation	Function/Meaning
0	CANFLAG_INIT	CanModul in the Initialisation phase
1	CANFLAG_ACTIVE	CanModul is active
2	CANFLAG_BUSOFF	CanModul in Bus-Off error status
3	CANFLAG_PASSIVE	CanModul in error passive status
4	CANFLAG_OVERFLOW	CanModul error – telegram overflow
5	CANFLAG_TXBUFFER_OVERFLOW	CanModul: Send buffer overflow
6	CANFLAG_RXBUFFER_OVERFLOW	CanModul: Receive buffer overflow

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
643	CO Heartbeat Set	0 ... 30000	1000	ms	RW

Heartbeat-Time – Setpoint.

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
644	CO Heartbeat Act	0 ... 30000	1000	ms	R

Heartbeat-Time: Active current value

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
645	CO NodeState Set	[00] UNKNOWN ... [129] RESET_COMM	[00] UNKNOWN		RW

Node-State: manual selection. (Only for test purposes)

Value	Designation	Function/Meaning
0	UNKNOWN	Deactivate Can
1	CO_INITIALISING	Initialise Can
4	CO_STOPPED	Stop Can
5	CO_OPERATIONAL	Activate Operational Mode (SDO + PDO)
127	CO_PRE_OP	Activate Pre-Operational Mode (SDO only)
128	CO_RESET_APP	Activate Reset Application
129	CO_RESET_COM	Activate Reset Communication

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
646	CO NodeState Act	[00] UNKNOWN ... [129] RESET_COMM	[00] UNKNOWN		R

Node-State: Current value

Value	Designation	Function/Meaning
0	UNKNOWN	CanOpen is not activated
1	CO_INITIALISING	CanOpen is being initialised
4	CO_STOPPED	CanOpen stopped
5	CO_OPERATIONAL	Operational Mode (SDO + PDO)
127	CO_PRE_OP	Pre-Operational Mode (SDO only)
128	CO_RESET_APP	Reset Application is active
129	CO_RESET_COM	Reset Communication is active
0x19	PL_INITIALISING	Power Link
0x29	PL_RST_APP	
0x39	PL_RST_COM	
0x79	PL_RST_CFG	
0x1c	PL_NOT_ACTIVE	
0x1d	PL_PRE_OP_1	
0x5d	PL_PRE_OP_2	
0x6d	PL_RDY_OP	
0xfd	PL_OPERATIONAL	
0x4d	PL_STOPPED	
0x01e	PL_BASIC_ETH	
0xff	PL_UNKNOWN	

It is possible to access the CanOpen Object Directory directly with the help of parameters [647] to [655].

15: Communication					
ID	**Name**	**Value-Range**	**Default-Value**	**Access**	**Declaration**
647	CO ObjIndex	0 ... 32767	0	RW	CanOpen Index im Objektverzeichnis
648	CO SubIdx	0 ... 127	0	RW	SudIndex im Objektverzeichnis
649	CO Value Set	0 ... 4294967295	0	RW	Sollwert (Schreibvorgang muss in [641] bestätigt werden!)
650	CO Value Read	0 ... 4294967295	0	R	Aktueller Wert des Objekts
651	CO ValueSize	0 ... 4294967295	0	R	Größe des Objekts (bits)
652	CO ValAddress	0 ... 4294967295	0	R	Interne Adresse des Objekts
653	CO Val#Test	0 ... 4294967295	0	R	–
654	TAE_CoBuffer_Id	0 ... 1200	0	RW	TAE Parameter ID
655	TAE_CoBufferValue	0 ... 4294967295	0	R	Wert des TAE Parameter im Can-Transfer Speicher

16. Parameter Group 16

16: Master/Slave

Master/Slave systems are available in 3 variations:

1. Rotational speed synchronous or ratio **angle deviations are not readjusted!**
2. Angular synchronism from Start onwards. **Angular deviations are readjusted subject to the preset ratios**. (Deviating Master und Slave impulses , e.g. due to rotational speed crashes, are readjusted!)
3. Machine Angle-Absolute-Synchronisation. **2 machines can be angularly synchronised randomly using 2 additional standard initiators**. Both machines will run synchronously in the required angle after 2-3 machine rotations or initiator messages!

With Pos. 1 and 2, an incremental rotational speed signal is required by both drives!
With Pos. 3, both the drives required an incremental rotational speed signal plus 2 additional standard initiators!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
670	MaSlv Ctrl	0000h ... FFFFh	0000h	[bits]	RW

Controlling the Master/Slave operating modes

Bit	Name	Note
0	Slave Function	Activate
1	Master with single track On Tr. B	Only functions with connection with input Track B, Connection Track A is used to define direction of rotation.
2	Exchange Master Signals A-B	Slave's direction of rotation is inverted and Par.680 Master Impulse Meter changes direction
3	Synchron Angle Not Speed	Angle deviations are readjusted taking the preset ratios into consideration
4	Slave Angle Correction	Enables angle correction (Par.674)
5	Change Slave Direction	Slave drive switches direction of rotation
6	Limit Master Pulse By ILimit	Impulse differences during current threshold are **not** readjusted!
7	Limit Master Pulse By Maxspeed	Impulse differences during maximum rotational speed are **not** readjusted!
8	Exchange Slave Signals A-B	To adapt the AB tracks of the motor.
9	Reset Counter	Par.680/681 (Current Master or Slave impulses) are reset.
10	Enable Sync On Motor Shaft (Z0)	2 machines are angularly synchronised with the motor shafts using 2 zero impulses
11	Enable Sync with Initiators (2Ini)	2 machines are randomly angularly sunchronised using 2 additional standard initiators.
12	Enable Electromagnetic Coupling (2 Ini)	Load will be switched on via electromagnetic coupling
13	Measure Master/Slave ratio (2 Ini)	Ascertains impulse ratio between Master and Slave according to gears.
14	Measure Master/Slave Impuls relation (2 Ini)	The Master and Slave ratio will be defined according to the impulse ratio
15	Get absolute Position of Slave (Z0)	Registers the offset of the slave motor to the master motor

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
671	MaSlv Stat	0000h ... FFFFh	0000h	[bits]	R

Status of the Master/Slave – operating modes

Bit	Name	Note
0	Slave Function	Active
1	Master with single track On Tr. B	Only functions with connection with input Track B, Connection Track A is used to define direction of rotation.
2	Exchange Master Signals A-B	Slave's direction of rotation is inverted and Par.680 Master Impulse Meter changes direction
3	Synchron Angle Not Speed	Angle deviations are readjusted taking the preset ratios into consideration
4	Slave Angle Correction	Enables angle correction (Par.674)
5	Change Slave Direction	Slave drive switches direction of rotation
6	Limit Master Pulse By ILimit	Impulse differences during current threshold are **not** readjusted!
7	Limit Master Pulse By Maxspeed	Impulse differences during maximum rotational speed are **not** readjusted!
8	Exchange Slave Signals A-B	To adapt the AB tracks of the motor.
9	Reset Counter	Par.680/681 (Current Master or Slave impulses) are reset.
10	Enable Sync On Motor Shaft (Z0)	2 machines are angularly synchronised with the motor shafts using 2 zero impulses
11	Enable Sync with Initiators (2Ini)	2 machines are randomly angularly sunchronised using 2 additional standard initiators.
12	Enable Electromagnetic Coupling (2 Ini)	Load will be switched on via electromagnetic coupling
13	Elec Magn Coupling ON (2 Ini)	Coupling active
14	Position OK (Z0)	Angle shifting located inside position window
15		

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
672	Ratio multiplier n(master) * Value	0 ... 64000	1000		RW
673	Ratio divisor n(master) / Value	0 ... 64000	1000		RW

Par. 672 and 673 create the electronic ratio of transmission between the Master and Slave drive!

$$\text{Slave rot.speed} = \frac{\text{Master rot.speed} \times \text{Ratio factor (Par. 672)}}{\text{Ratio distributor (Par. 673)}}$$

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
674	Angle correction	-32767 ... 32767	0	°deg	RW

Angle Offset between Master and Slave. Angle Offset to the Slave is added once by activating Parameter 671 bit 4. During the angular synchronization using 2 zero impulses on the motor shaft, this parameter is calculated automatically.

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
675	Encoder PPR Master	0 ... 32767	0	ppr	RW

Inputting the impulses per rotation of the Master drive.

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
676	P-amplification slave (static)	0 ... 100	50	---	RW

Static reinforcement of the synchronous controller

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
677	P-amplification acceleration	0 ... 100	5	---	RW

Reinforcement of the synchronous controller during the acceleration phase

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
678	Angle displacement	-2147483647 ... 2147483647	0	Imp	RC

No angle shifting is permitted with parameter setting 0. Maximum angle shifting is performed by the software. For a detailed description, please refer to “Manual - Synchronisation U-Drive.pdf”

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
679	Angle displacement reaction time	0 ... 60000	1	ms	RW

Defined response time for the modification of the angle offset for Run Leading = *Voreilend* (Par.691 Bit 0) or Lagging = *Nacheilend* (Par.691 Bit 1). For a detailed description, please refer to “Manual - Synchronisation U-Drive.pdf”

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
680	Actual Impulse Master	-2147483647 ... 2147483647	---	Imp	R

Impulse meter for master drive since last meter Reset!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
681	Actual Impulse Slave	-2147483647 ... 2147483647	---	Imp	R

Impulse meter for Slave drive since laster meter Reset!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
682	Slave Speed Calibration	0 ... Par.81	---	rpm	R

Displays the rotational speed standardisation.

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
683	Leading Speed	-Par.75 ... +Par.75	---	rpm	R

Current rotational speed of the master drive

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
684	Position window (Ini)	1 ... 1000	10	Imp	RW

Entry value for maximum angle deviation between Master and Slave drive when using angular synchronisation with 2 additional initiators!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
685	Position maximum speed (Ini)	0,0 ... Par.75	100,0	rpm	RW

Maximum rotational speed of slave when using angular synchronisation with 2 additional initiators!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
686	P-amplification positioning (Ini)	0 ... 100	0	---	RW

Static reinforcement of the angle position controller when using angular synchronisation with 2 additional initiators!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
687	EM-Coupling delay (Ini)	0 ... 60000	0	Imp	RW

Entry value of the calculated motor impulses in the period between Activate Coupling and Coupling Mechanically Connected.
Only applies when using angular synchronization with 2 additional initiators and electromechanical coupling!

16: Master/Slave					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
688	Master-Slave relation factor (Ini/Z0)	1,00 ... 600,00	1,00		RW

The relationship between the Master and Slave can be determined by activating Parameters 670 Bit 14. The corresponding values are displayed in Parameter 680 for the Master and in 681 for the Slave.
The value for Parameter 688 can be ascertained by dividing the two displayed values.
For a detailed description, please refer to “Manual - Synchronisation U-Drive.pdf”

17. Parameter Group 17

17: Motor potentiometer
To display and control motor potentiometer applications

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
690	Digital Motorpoti Selection	0000h ... 0007h	0000h	[bits]	RW

Selection of the basic motor potentiometer functions.

Bit	Name	Note
0	Motorpoti	Activate motor potentiometer
1	Save Motorpoti value by Power down	When mains voltage OFF
2	Start Motorpoti by Zero	When motor potentiometer ON, value is always zero

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
691	Digital Motorpoti Command	0000h ... 0003h	0000h	[bits]	RW

To control the motor potentiometer.

Bit	Name	Note
0	Motorpoti UP	With active ramp
1	Motorpoti DOWN	With active ramp

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
692	Digital Motorpoti Status	0000h ... 0003h	---	[bits]	R

To display the motor potentiometer status.

Bit	Name	Note
0	Motorpoti	Motor potentiometer ON
1	Motorpoti UP	With active ramp
2	Motorpoti DOWN	With active ramp
3	Save Motorpoti value by Power down	When mains voltage OFF
4	Start Motorpoti by Zero	When motor potentiometer ON, value is always zero

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
693	Digital Motorpoti Speed	0,0 ... Par.101	0,0	rpm	RW

Displays the motor potentiometer position.

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
694	Digital Motorpoti Limit UP	0,0 ... 100,0	100,0	%	RW

Percentage upper boundaries of motor potentiometer with reference to Par. 672.
No function at this time!

17: Motorpotentiometer					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
695	Digital Motorpoti Limit DOWN	0,0 ... 100,0	0,0	%	RW

Percentage lower boundaries of motor potentiometer with reference to Par. 672.
No function at this time

18. Parameter Group 18

18: Positioning
To display and control positioning applications

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
840	Positioning Control	0000h ... FFFFh	0000h	[bits]	RW

Controlling various positioning tasks.

Bit	Name	Note
0	Enable positioning	
1	Definie Pos Direction	The preset Forwards direction of rotation from Par. 553 Bit 2 is read using the Pulse command.
2	Goto First Position	Drive travels on into position set in Par.847
3	Goto Start Position	Drives moves back into the Start position.
4	Select Break Curve Linear	Drive brakes linearly in the target position
5	Select Break Curve Elliptic	Drive brakes in the target position in an S-curve shape.
6	Reset Position	Position meter is reset to zero.
7	Positions Correction near PosWindow	Deviation due to drag error – position screen is correction.
8	Correct Positioning Error	Drive is only positioned in one direction; with every Reset, drive travels the same route if Bit 2 is statically pending.
9	Enable Resolution Encoder Pulses x 4	Encoder impulses are evaluated four times
10	Cyclic positioning	Drive loops between 2 positions.
11		
12		
13	Change Counter Direction	Position meter runs in opposite direction.
14		
15		

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
841	Positioning Status	0000h ... FFFFh	---	[bits]	R

Displays the current positioning function.

Bit	Name	Note
0	Positioning enabled	
1	Definie Pos Direction	The Pulse command is used to read the set Forward direction of rotation from Par.553 Bit 2.
2	Goto First Position	Drive travels into the preset position (Par.847)
3	Goto Start Position	Drive returns to Start position.
4		
5		
6	Reset Position	Position meter is reset to zero.
7		
8	Position not OK	Drive is located outside the position window.
9		
10	Cyclic positioning	Drive loops between 2 positions.
11	Position OK	Drive located within the position window.
12		
13		
14	New Ref Position	A change in the reference position has occurred during operation
15	New Ref PosSTActPos	The reference position was reduced during operation

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
842	Maximum reference position	0 ... 2147483647	0	Imp	RW

To enter the maximum position in the Encoder Impulses of the motor (softward limit switch)

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
843	Position window	1 ... 1000	10	Imp	RW

To enter the maximum deviation in the target position in the Encoder Impulses of the motor.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
844	Position maximum speed	0,0 ... Par.75	100,0	rpm	RW

Maximum rotational speed during positioning

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
845	P-amplification for positioning	0 ... 100	80	---	RW

Reinforcement of the position regulator

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
846	Speed Min_Threshold	0,0 ... Par.75	100,0	rpm	RW

Within the area of the Position window, the motor cannot come to a stop due to the dynamics. Thus, the signal “Position Ok” is not steady. If the rotational speed is below the set “Min Drehzahl Schwelle” (Minimum Rotational Speed Threshold) andnd Signal “Position Ok”, the next positioning function can be initiated.
Note:
Important for drives which loop between 2 positions.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
847	Reference position	0 ... 2147483647	0	Imp	RW

To enter the target position in the Encoder Impulses of the motor.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
848	Adjust brake curve time	0,1 ... 600,0	0,2	s	RW

Braking time directly ahead of target position.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
849	Actual reference position	-2147483647 ... 2147483647	---	Imp	R

Displays the set reference position in the Eoncoder Impulses of the motor.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
850	Actual position	-2147483647 ... 2147483647	---	Imp	R

Displays the current position of the drive in the Encoder Impulses of the motor.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
851	Actual position difference	-2147483647 ... 2147483647	---	Imp	R

Deviation between the position of the drive and the required position in the Encoder Impulses of the motor.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
852	P-amplification near pos. window	0 ... 100	0	---	RW

Reinforcement of the position regulator for deviations due to Contouring error – Position window.

18: Positioning					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
853	Test Reg 1	0 ... 65535	0		RW
854	Test Reg 2	0 ... 65535	0		RW

19. Parameter Group 19

19: Winder
Currently not available!

20. Parameter Group 20

20: Braking system
Displays and controls applications with electromagnetic brakes on motor.

20: Brake Systems					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
860	Brake System Control	0000h ... 0003h	0000h		RW

Bit	Name	Note
0	Enable Brake System	Activated control of brake by drive. **Caution! Digital output Terminal 13 is reserved for addressing the brake. Other interlinks to Terminal 13 (Par.210 Bit 9) have no function.**
1	Brake System with Feedback	Acknowledge contact integrated in controls

20: Brake Systems					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
861	Brake System Status	0000h ... 001Fh	---		R

Bit	Name	Note
0	Brake System Enabled	Braking system is active
1	Brake System with Feedback	Brake equipped with Feedback contact
2	Brake Feedback Signal	Pending (Brake bled). Feedback must be linked with this Bit via the digital input and SPC function.
3	Brake loosened	Brake is basically addressed with this Bit via relay output terminal 13. **Other interlinks to Terminal 13 (Par.210 Bit 9) have no function.**
4	Brake Feedback Signal Error	Addressing of brake and feedback do not match! **Drive is set to Holding function until regulator is blocked and Reset has been performed!**
5	Brake leaded Decleration	Controlled run-down is activated automatically

20: Brake Systems					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
862	Brake Delay start time	0 ... 60000	0	ms	RW

Setpoint enabled after time preset here.

Sequence of steps when drive is activated:
- Enabling of regulator and addressing of brake (bleed) occurs at same time.
- Pending rotational speed setpoint enabled after time set here.
- Or, if feedback is in use, once Feedback has occurred, according to time set here.

20: Brake Systems					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
863	Brake Delay stop time	0 ... 60000	0	ms	RW

Blocking of regulator after time set here.

Sequence of steps when drive is de-activated:
- Drive speed with active braking ramp reduced to zero.
- Brake is closed.
- Blocking of regulator after time set earlier (above).

- Or, if feedback is in use, once Feedback has occurred, regulator is blocked after time set above.

21. Parameter Group 21

21: Keypad PG4000
Settings for the der Keypad interface “PG4000”.

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
700	menu_control	0000h ... 0011h	0000h		RW

Bit	Name	Function
0	Inhibit Err-/Warn Messages	Disable error and warning messages on the Keypad
1…3		
4	Reset GetText	Reset text buffer

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
701	PG4000_timeout	1 ... 5000	100	ms	RW

Timeout for the communication with the Keypad.

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
702	keypad_delay_init	1 ... 1000	10		RW

Key delay: Start
Delay between initial key depression and key repeat

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
703	keypad_delay_repeat	1 ... 1000	2		RW

Key delay: Repeat
Delay between key function repeats

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
704	sercom_protocol	0 ... 2	0		RW

Protocol at the PG4000 interface
0: PG4000
1: TAE internes Debug-Protokoll

Value must be set to 0 in order for the PG4000 to function!

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
705	Menu.refresh_cycle_time	0 ... 2000	200	ms	RW

Time interval for the refreshing of the menu (ACT value, etc.)

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
706	Menu-Language	[00] english ... [01] deutsch	[00] english		RW

Menu language:
0: English
1: German (Currently not available)

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
720	KEYS_Bitmap	0000h ... 003Fh	0000h		R

Latest keys pressed on Keypad

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
721	keypad_run	0000h ... 003Fh	0000h		R

Currently active key functions

21: Keypad PG4000					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
722	KEYS_Counter[0]	0 ... 256	0		R
723	KEYS_Counter[1]	0 ... 256	0		R
724	KEYS_Counter[2]	0 ... 256	0		R
725	KEYS_Counter[3]	0 ... 256	0		R
726	KEYS_Counter[4]	0 ... 256	0		R
727	KEYS_Counter[5]	0 ... 256	0		R

Counter for key occurrences on the Keypad.

22. Parameter Group 22

22: Error Logbook
Displays and controls Error History.

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
800	errlog_ctrl	0000h ... F331h	0000h		RW

Bit	Name	Function
0	Suspend Log	Stop recording
1	-	
2	-	
3	-	
4	No WrapAround	Disable ring buffer (no overwriting of old entries)
5	Reverse Order	Reverse order sequence of Entry Selector
6	-	
7	-	
8	Clear History	Delete Logbook
9	Reset History	Reset Logbook
10…15	-	

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
801	errlog_status	0000h ... 0011h	---h		R

Bit	Name	Function
0	Error active	Error status is active
1…3		
4	Hist_limit_reached	Error Logbook is full

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
802	errlog_eep_config.n_errors	0 ... 100	---		R

Number of recorded error occurrences.

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
803	errlog_selector_idx	0 ... 99	---		R

Active selection (internal index) of error occurrences for display.

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
804	errlog_selector	-100 ... 100	0		RW

Select (Index) of error occurrences for display.

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
805	errlog_selector_accepted	-100 ... 100	---		R

Active error selection

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
806	errlog_selected_logitem.time	2000-00-00T00:00:00 ... 2063-15-31T31:63:63	---		R

Timestamp for selected error entry (T32 Format, see below)

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
807	errlog_selected_logitem.error	0000h ... FFFFh	---h		R

Error occurrence – Error status value

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
808	errlog_selected_logitem.xerror	0000h ... FFFFh	---h		R

Error occurrence – Change in preceeding status value

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
813	errlog_eep_config.last_idx	-1 ... 100	---		R

Last recorded internal entry

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
814	errlog_act_errors	0000h ... FFFFh	---h		R

Current error status (see Parameter [571] “Error Conditions” in Group [14])

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
815	errlog_act_errors_mask	0000h ... FFFFh	FFFFh		RW

Select Error Flags, which are to be entered in Logbook
(For Bits see Parameter [571] “Error Conditions” in Group [14])

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
816	errlog_act_errors_DBG	0000h ... FFFFh	0000h		R

TEST: Error simulation
Fault registered in Logbook for test purposes.
(For Bits see Parameter [571] “Error Conditions” in Group [14])

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
817	errlog_eep_errors_read	0 ... 100	---		R

TAE-Debug Parameters

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
818	errlog_eep_errors_write	0 ... 100	---		R

TAE-Debug Parameters

22: Error Log					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
819	errlog_time_now	2000-00-00T00:00:00 ... 2063-15-31T31:63:63	---		R

Current system time of regulator in T32 format

T32 Time Format
Timestamps are saved in the Error Logbook in a compact double word format. The structure of the bit field is as follows:

T32 Time Format – Bit Field Description			
Offset	N Bits	Name	Value Range
0	6	Seconds	(0 … 59)
6	6	Minutes	(0 … 59)
12	4	Month	(0 … 11)
16	5	Hour	(0 … 23)
21	5	Day	(1 … 31)
27	6	Years since 2000	(0 … 63)

A time range from 2000-00-00T00:00:00 yo 2063-15-31T23:59:59 can therefore be displayed with this.

23. Parameter Group 23

23: Trace
Trace Functions:
Consecutive and triggered recording of parameter values

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1000	trace command	0000h ... 0037h	0000h	[bits]	RW

Bit	Name	Function
0	Start Now	Start Trace
1	Start On Trigger	Start Trace including Trigger condition
2	Run Idle	Activate Non-Real-time Trace
3	–	–
4	Cancel	Cancel current Trace
5	Reset	Cancel current Trace and reset error/status flags
6…15		

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1001	trace status	0000h ... F133h	---h	[bits]	R

Bit	Name	Function
0	Trace Running	Trace is currently active
1	Idle Running	Idle-Trace (Polling Mode) is active
2		
3		
4	Trace done	Trace is completed
5	Trigger active	Trigger condition is currently fulfilled
6		
7		
8	Trace N/A	Trace function is not available
9		
10		
11		
12	Err#TrigParam	Error: Invalid Trigger Parameter [1011]
13	Err#BufferOvrun	Error: Trace buffer overflow
14	Err#BankSel	Error: Invalid Trace Bank Selector [1040]
15	Err#ChSize	Error: Maximum size of all Trace channels exceeded

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1010	trigger type	[00] > v (immediate) ... [07] Bit=0 (on edge)	[04] Bit=1 (sofort)	[bits]	

Bit	Name	Comments
0	> v (immediate)	Trigger remains active until the comparison value is exceeded
1	< v (immediate)	… remains active until the comparison value cannot be met
2	> v (on edge)	… is currently active, as soon as the comparison value is exceeded
3	< v (on edge)	… is currently active, as soon as the comparison value cannot be met
4	Bit=1 (immediate)	… active as long as all the Bits set in the reference value are present in the Trigger parameters
5	Bit=0 (immediate)	… active as long as all the Bits set in the reference value are 0 within the Trigger parameters
6	Bit=1 (on edge)	… will become active once all the Bits set in the reference value are 1 in the Trigger parameters
7	Bit=0 (on edge)	... will become active once all the Bits set in the reference value are 0 in the Trigger parameters

- Reference value: (Par.1013)
- Comparison value: (Par.1014)

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1011	trigger parameter id	0 ... 65535	560		RW

Comparison value parameter ID for Trace Trigger

23: Trace

ID	Name	Value-Range	Default-Value	Unit	Access
1012	trigger parameter decimals	-1 ... 10	0		RW

Number of decimal places in threshold value (Par.1013)

- -1: Standard value of decimals for selected Trigger parameter is set

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1013	trigger compare value	-1000000 ... 1000000	0		RW

Reference value / threshold value for the Trigger

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1014	trigger actual value	-1000000 ... 1000000	---		R

Current comparison for the Trigger, shown with decimal settings set in Par.1012

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1015	trigger time-stamp	0 ... 4294967295	---	µs	R

Timestamp for last Trigger event in µs since operation

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1020	sample dilation factor	1 ... 100000	1		RW

Expansion factor for the scan period of Trace

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1021	sample time tick	0,000 ... 100000,000	---	µs	R

Minimum scan period

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1022	sample time period	0,000 ... 100000,000	---	µs	R

Actual scan period = Sample Expansion Factor x Min Sample Periode = (Par.1020 x Par.1021)

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1023	trace time total	0,000 ... 100000,000	---	ms	R

Total Trace period
Resulting from Par.1022, the overall width of all the utilised sample channels Par.1025 and the variables of the available Samples buffer (Par.1025).

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1024	sample size	0 ... 16	---	B	R

Overall width of all the utilised sample channels in Bytes (s. Par.1030 to 1037)

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1025	n sample buffer size	0 ... 65535	2048	W	R

Size of the available Sample buffer in Word

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1026	n samples available	0 ... 65535	---	ms	R

Number of samples that can be recorded

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1027	trace sample running	0 ... 65535	---		R

Index of the currently recorded samples in the Trace that is underway

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1030	param ch #1	0 ... 4294967295	0		RW
1031	param ch #2	0 ... 4294967295	0		RW
1032	param ch #3	0 ... 4294967295	0		RW
1033	param ch #4	0 ... 4294967295	0		RW
1034	param ch #5	0 ... 4294967295	0		RW
1035	param ch #6	0 ... 4294967295	0		RW
1036	param ch #7	0 ... 4294967295	0		RW
1037	param ch #8	0 ... 4294967295	0		RW

Parameter IDs of the sample channels

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1040	sample bank select	-1 ... 65535	0		RW

Sample Bank Selector
-1: Idle-Polling Samples are displayed (in consecutive order)
- 0 … [1026] – 1: Sample of latest Trace is displayed

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1041	sample act time-stamp	0 ... 4294967295	-	µs	R

Timestamp of selected Sample Bank

23: Trace					
ID	**Name**	**Value-Range**	**Default-Value**	**Unit**	**Access**
1042	sample value #1	0 ... 4294967295	---		R
1043	sample value #2	0 ... 4294967295	---		R
1044	sample value #3	0 ... 4294967295	---		R
1045	sample value #4	0 ... 4294967295	---		R
1046	sample value #5	0 ... 4294967295	---		R
1047	sample value #6	0 ... 4294967295	---		R
1048	sample value #7	0 ... 4294967295	---		R
1049	sample value #8	0 ... 4294967295	---		R

Values from selected Sample Bank